

**REMARKS:**

In the outstanding Office Action, the Examiner rejected claims 1-5 and 16. New claim 28 is added, and claims 6-15, 17 and 18-27 remain cancelled. No new matter is presented. Thus, claims 1-5, 16 and 28 are pending and under consideration. The rejections are traversed below.

**REJECTION UNDER 35 U.S.C. § 103(a):**

Claims 1-5 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,163,097 (Pegg).

The Examiner states that display of random digits in respective positions arranged on a display screen is well known. The Applicants respectfully traverse the Examiner's statement and demand the Examiner to produce authority for the statement. The Applicants specifically point out the following errors in the Examiner's action.

First, the Examiner uses common knowledge ("well-known") evidence for the rejection. As explained in the M.P.E.P.,

any facts so noticed should... server only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the Examiner to support a particular ground for rejection. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection is based.

**M.P.E.P. § 2144.03**

Second, the noticed fact is not considered to be common knowledge or well-known in the art. In this case, the limitation is not of notorious character or capable of instant and unquestionable demonstration as being well-known. Instead, this limitation is unique to the present invention (see, M.P.E.P. § 2144.03(A) (the notice of facts beyond the record which may be taken by the Examiner must be "capable of such instant and unquestionable demonstration as to defy dispute").

Third, there is no evidence supporting the Examiner's assertion (see, M.P.E.P. § 2144.03(B) ("there must be some form of evidence in the record to support an assertion of common knowledge").

Fourth, the Examiner appears to be basing the rejections, at least in part, on personal knowledge. The Examiner is required under 37 C.F.R. § 1.104(d)(2) to support such assertion

with an affidavit when called for by the Applicant. The Examiner is called upon to support such assertion.

Further, even if the Examiner's assertion and rejection based on common knowledge is valid, the present invention is distinguishable as discussed below.

Pegg is directed to a method that prevents an onlooker from viewing and stealing a password, a PIN, etc. To this end, Pegg provides a plurality of algorithms, and lets a user select one of these algorithms (see, col. 2, lines 34-44). The user calculates an access code based on a fixed key such as a PIN, a dynamic key such as Dow Jones Industrial Average, and a selected algorithm, and enters the access code (see, col. 2, lines 44-48 and col. 4, lines 35-47). Then, an authorization center compares the user-entered access code with a code calculated at the authorization center (see, col. 5, lines 3-8).

A user using the Pegg system is required to memorize an access key and a selected cipher algorithm to gain access to the system, and then, the user is provided with an option of selecting another algorithm. That is, Pegg requires entry of all of the following: (1) an access code (114), a user-selected cipher algorithm (118) and (3) a dynamic variable to gain access into the system (see, col. 5, lines 17-29).

One of the drawbacks of the Pegg method is that the dynamic variables need to be obtained from an external source, and thus, requires the authentication apparatus to be online. This presents a problem because, for example, such apparatus cannot authenticate a user in an event a communication line problem exists and the dynamic variables cannot be obtained. Another problem exists in Pegg when a user enters a wrong number by mistake and is notified of the mistake because the user must re-enter the same number (the dynamic variables in Pegg stay the same), thereby creating an opportunity for a security breach.

The Examiner acknowledges that Pegg fails to explicitly disclose a display unit configured to display random digits at the respective digit positions arranged across a display screen, but rejects the claims based on an Official Notice. However, in the claimed invention, the random digits are not only displayed at the respective digit positions, but are also used to calculate a value of one of the arithmetic formulas by assigning the random digits to one of the arithmetic formulas. That is, the random digits are used as part of the claimed authentication.

It is respectfully submitted that displaying random digits at respective digit positions and using the random digits (including respective positions thereof) is not well known in the art, and

no support has been provided stating otherwise. Therefore, Applicants submit that the rejection is without proper foundation and should be withdrawn. If the Examiner disagrees, it is respectfully requested that support be provided.

In contrast to Pegg, the present invention uses random digits at respective digit positions arranged on a display screen to execute an authentication operation.

Independent claims 1 and 4 recite that checking user identification in the present invention includes use of “a user-defined arithmetic formula... defining calculation of variables assigned to respective digit positions arranged on a display screen” and “random digits at the respective digit positions on the display screen when a user logs in”. That is, the claimed authentication includes use of “the random digits” and “respective digit positions” with respect to calculation of “a value of the arithmetic formula” to authenticate a user (claims 1 and 4).

Pegg does not teach or suggest using “random digits at respective digit positions” for authenticating a user, as claimed in independent claims 1 and 4. Instead, Pegg uses dynamic variables, such as Dow Jones Industrial Average, that is not presented to the user but known to the user.

It is submitted that the independent claims are patentable over Pegg.

For at least the above-mentioned reasons, claims depending from independent claims are patentably distinguishable over Pegg. The dependent claims are also independently patentable. For example, as recited in claim 16, “when the user enters a wrong user-entered value, the user is allowed to enter a new user-entered value in response to at least one new randomly generated number being presented to the user”. Pegg does not teach or suggest these features of claim 16.

Therefore, withdrawal of the rejection is respectfully requested.

**NEW CLAIM:**

New claim 28 has been added to emphasize that the present invention includes, “displaying a randomly generated number having digits displayed at respective positions to a user” and generating a check value using “a user-defined arithmetic formula of the user” and “the displayed randomly generated number including the respective positions of the digits displayed”. This enables access to the system “when a value entered by the user responsive to the displayed randomly generated number matches the check number”.

Pegg does not teach or suggest, generating a check value using "a user-defined arithmetic formula of a user" and "the displayed randomly generated number having the digits displayed at the respective positions" to authenticate identity of the user and enable access to the system, as recite in new claim 28.

It is submitted that new claim 28 is patentably distinguishable over the cited references.

**CONCLUSION:**

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

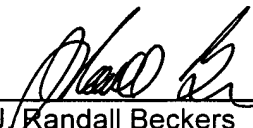
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 10/28/15

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